

# Governor's STEM Academy Brief



Office of Career and Technical Education Services

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The purpose of the monthly brief is to provide information, resources, and a networking vehicle to support the STEM (science, technology, engineering, and mathematics) Academies in Virginia.

## GOVERNOR'S STEM ACADEMIES SPOTLIGHT

Carroll County was the first location in the nation to teach agriculture in high school through the Smith-Hughes Act of 1917. Now, at the Blue Ridge Crossroads Governor's Academy for Technical Education, Carroll County is the first school division in the nation to have a STEM lab specifically designed for agricultural education. The Board of Supervisors financed the STEM project through USDA-RD with a \$500,000 investment in agriculture, education, and economic development. Students using the STEM lab learn scientific protocols vital in the Agriculture, Food and Natural Resources Career Cluster to assist local producers in meeting higher food safety levels and providing lab services. Students solve problems by applying science, technology, engineering and mathematics (STEM) concepts and using related equipment and resources, providing a strong base for further education and needs analysis.

## CAREER LINKS—AGRICULTURE, FOOD AND NATURAL RESOURCES

- Career resources for the Agriculture, Food, and Natural Resources cluster may be found at [Careers in Forestry & Natural Resources](#), [My NRCS Career](#), [Virginia Tech: Careers in Natural Resources](#), and [Junior Achievement: Agriculture, Food, and Natural Resources \(when log-in box appears, click "x" to close box\)](#).
- See [Virginia Wine](#) and [Viticulture and Enology Science and Technology Alliance for an introduction to the wine industry, including instructional videos and learning modules](#).
- [A Geographic Analysis of Agritourism in Virginia](#), [Agritourism in Virginia](#), [Agri-Tourism](#), [Agritourism: Ideas and Resources](#), and similar sites feature new agricultural business opportunities in the Commonwealth.
- [Safe Coast Virginia: Climate Change Threats and Practical Solutions for Coastal Virginia](#) is a 2014 report from the Chesapeake Climate Action Network. For a national perspective, see [Climate Change Impacts in the United States](#).
- For agricultural export basics, go to [Foreign Trade Online](#) and [USDA Foreign Agricultural Service](#).
- Discover tools, market needs, and innovations in the food industry at [Food + Tech Connect](#).
- [USDA: Animal & Plant Biosecurity](#), [World Health Organization: Food Security](#), [SciDevNet](#), [Climate Change: How a Warming World Is a Threat to Our Food Supplies](#), and [Food and Agriculture Organization of the United Nations: The State of Food and Agriculture 2013](#) provide information and research on food security.
- Recent technological advancements in agriculture are highlighted in [Agriculture: The New Game of Drones](#), [Agriculture.com](#), [Farm Journal](#), [Farm of the Future](#), [Farming the Future: GIS for Agriculture, Vol. 2](#), and [GIS for Natural Resources](#).
- The [Bureau of Labor Statistics](#) offers up-to-date information on career opportunities in Agriculture, Food and Natural Resources.
- [Career Cluster Employment Projections, 2010–2020](#), presents an overview of changes predicted for career clusters, including Agriculture, Food and Natural Resources.
- [Career Cluster Predictions: Employment Opportunities in 2018](#) gives the NASDCTEc-sponsored report on employment projections for 2008–2018, prepared by The Center on Education and the Workforce (CEW) at Georgetown University. The report focuses particularly on the issue of changing education requirements.
- To explore agricultural research by government agencies and public universities, visit [Agricultural Research Magazine](#) (USDA), [Special Programs and Quick Links](#) (Virginia Department of Agriculture and Consumer

Services), [Agriculture Research Station](#) (Virginia State University), [Agricultural Research and Extension Centers](#) (Virginia Tech), and [Crafting the Future of Agriculture and Forestry](#) (Clemson University).

- [USA Today](#) provides a free Department of Agriculture document that contains current data, hot topics and career information while saluting the USDA on its 150<sup>th</sup> birthday.

## GRANTS AND OPPORTUNITIES

- Since 1988, the [Sustainable Agriculture Research & Education \(SARE\)](#) program has been the go-to source for USDA grants and outreach programs for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded \$204 million for more than 5,100 initiatives. SARE has awarded 83 grants in Virginia since 1988.
- [National Agriculture in the Classroom](#) provides funding for agriculture-related projects as well as Excellence in Teaching Awards, lesson plans, Webquests, virtual tours, and a Teen Scene.

## INSTRUCTIONAL STRATEGIES

- The Advanced Technology Environmental and Energy Center offers a free online publication titled [Best Practices Guide for Developing Educational Programs: Environmental and Energy Technology](#), as well as other resources for educators.
- For an introduction to the impact of human nature on energy conservation, see [The Hot New Frontier of Energy Research Is Human Behavior](#).
- Search [OpenEd](#) for classroom lessons, videos, and other resources on agriculture and related topics.
- [Penn State University's College of Agricultural Sciences has developed Educator Generated Lesson Plans, as well as links for Potential Career Paths.](#)
- The [National Energy Education Development Project](#) offers energy-related [Curriculum Resources](#) and [Supplemental Materials](#) for educators, along with [Science Fair Project ideas for students](#).
- See [actionbioscience](#) for links to articles on current [biodiversity](#) and the [environment](#), as well as a [lesson directory](#).
- The Vegetarian Resource Group offers links to [VRG Guides and Handouts](#) (including lesson plans), [Teen FAQs](#), and [Vegetarian Business](#).
- [Genetically-Modified Food](#) is a lesson plan available from the Public Broadcasting Service.
- For current information about food and nutrition, go to [food & nutrition research](#); the USDA's [Food and Nutrition Information Center](#) and [Food and Nutrition Service](#); [FoodNavigator.com](#); and [Current Research in Nutrition and Food Science](#).
- A variety of state and federal educational resources relate specifically to the Agriculture, Food and Natural Resources Cluster, including [Virginia Naturally](#) and the following National Agricultural Library sites: [Ethnic and Cultural Resources](#), [Food Science and Technology](#), and [Food Service](#).

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